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ABSTRACT

This paper reports on part of a longitudinal study of personality and cognitive development in young children, specifically, efforts to identify and measure the concepts of ego control and ego resiliency. The concept of ego control refers to the disposition or threshold of an individual with regard to the expression or containment of impulses and desires. The concept of ego resiliency refers to the capacity of an individual to modify his modal ego control capacity, in either direction, as a function of the demand characteristics of the environmental context. At ages 3.5 and 4.5, for 120 children, ego control and ego resiliency were objectified or indexed in two fundamentally different ways, via a composite score based upon the child's performance in a half dozen independent experimental situations and via a composite score based on the independent Q-sort personality descriptions of each child, offered by their nursery school teachers. In addition, Q-sort descriptions of each child at age 7 were obtained later from their elementary school teachers. (These data are still being analyzed.) The two very different methods used to objectify the concepts of ego control and ego resiliency at three time periods were evaluated with regard to their conceptual and psychometric properties. Results indicate the presence in behavior, for both sexes, over time, and across methods of experimentation and observation, of two context-responsive personality subsystems that separately and in conjunction appear to have consequentiality. (SB)

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The Developmental Continuity of Ego Control and Ego Resiliency: Some Accomplishments

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It has become conventional, by now even traditional, for psychologists to assume that behavior is inconsistent across situations and across time. In reaction to this expectation of disorderly behavior, some psychologists have offered a conceptual basis for their pessimism -- they have said that behaviors are exquisitely and idiosyncratically discriminable so that no broad ways of dimensionalizing or classifying individuals will be found to be useful; in ineluctible ways, behavior is essentially unpredictable. More optimistic psychologists have turned their energies toward efforts to identify reasons they presume must account for the generally poor evidence empirical psychology has yet adduced for the lawfulness of behavior. It is by no means certain that the optimists will find their faith fulfilled. What is certain, however, is that the pessimists will not lead the way to understanding.

This prelude is by way of introduction to our frankly optimistic longitudinal study of personality and cognitive development in young children and our efforts to identify and to measure well two concepts central to our thinking, ego control and ego resiliency.

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This paper was delivered at a symposium on The Organization of Development and the Problem of Continuity in Adaptation at the meetings of the Society for Research in Child Development, New Orleans, March 1977.

The two personality subsystems or structures with which we have been primarily concerned over the years, ego control and ego resiliency, can be related to two properties of psychological boundaries described by Lewin -- boundary permeability in the case of ego control and boundary elasticity in the case of ego resiliency. Briefly described, the concept of ego control refers to the threshold or operating characteristic of an individual with regard to the expression or containment of impulses, feelings, and desires. Holding environmental context constant, ego undercontrollers are comparatively spontaneous, unable to delay gratification, impulsive; ego overcontrollers are constrained, delay gratification unduly, indecisive. The concept of ego resiliency refers to the dynamic capacity of an individual to modify his modal level of ego control, in either direction, as a function of the demand characteristics of the environmental context. Ego resilient persons are able to adapt resourcefully to changing circumstances and environmental contingencies; ego brittle -- or unresilient -- persons have little adaptive flexibility and tend to perseverate or fall apart under stress.

An assessment battery averaging 38 different procedures -- standardized tests, laboratory situations, observations of play in standardized settings and in the nursery school setting, and test procedures developed specifically for purposes of this project -- was administered to our panel of about 120 children at each of four age levels -- three, four, five, and seven years. Four considerations guided the selection of measures.

First, measures were included that, on an <u>a priori</u> basis, were expected to relate to the ego control construct. These measures included actometer readings, the Curiosity Box (after Banta), level of aspiration, delay of gratification assessed by several different methods, barrier behaviors,

satiation, recognition of incomplete pictures, yielding to contextual "pull," planfulness, and risk taking. Scores on those measures administered within any given year were standardized and composited to provide an experimentally based index of ego control at each assessment period.

Second, measures were included that, on an a priori basis, were expected to index the ego resiliency construct. These measures included motor inhibition tasks, incidental learning, dual focus, ability to profit from feedback, recognition of change in environmental contingencies using a partial reinforcement/no reinforcement paradigm, ability to generate alternative explanations, McReynolds Concept Evaluation Test to evaluate intra-individual consistency in the application of one's own standards for similarity, resourcefulness under frustration. Again, scores on those measures administered within any given year were standardized and composited to provide an experimentally based index of ego resiliency at each assessment period.

Third, measures were included to reflect various aspects of cognitive functioning (e.g., creativity, intelligence, conservation, memory), moral and affective development, and social behavior to permit a wide-ranging understanding of development in early childhood.

Fourth, a final set of measures included several marker variables that have been used widely in developmental psychology -- measures of field independence (the Embedded Figures Tests and the Portable Rod and Frame Test), the Matching Familiar Figures Test, the Sigel Object Sorting Test, and other measures of categorization and conceptual style. Not only did we anticipate evaluating the predictive utility of the ego control and ego resiliency concepts with regard to these measures but their inclusion permits also the opportunity for replication which can contribute to cumulative knowledge.

In addition to the experimentally derived indices of ego control and ego resilience described above, a second method was used to objectify these concepts. In addition to the data collected in the testing sessions, comprehensive personality descriptions of each child were provided by their nursery and elementary school teachers, who had had the opportunity of observing each child, on a day-to-day basis, for months. The teachers were trained to use the California Child Q-Set, consisting of 100 personality-relevant items adapted from the adult form of the California Q-Set, to describe each child in their class. Three independently formulated Q-sort descriptions were obtained for each child at age three and were composited to provide an overall picture of the child's functioning as viewed by his or her teachers. The same procedures were followed at age four with three completely different teachers providing their impressions of each child, again using the CCQ in a forced-choice format. Finally, at age seven, Q-sort descriptions of each child were obtained from their elementary school teachers (and teacher-aides when possible) according to the procedures used earlier. Nine different teachers were involved inQQ-sorting at age three; eleven teachers, none of whom overlapped with earlier or later observers, contributed to the Q-sort composites at age four; and at age seven, because of the number of different schools and classes to which children were assigned, a total of 67 different teachers were involved.

These Q data were used to generate a second index of ego control and of ego resiliency. Separately, criterion definitions of control and resiliency had been provided by three clinical psychologists who used the CCQ set to describe a hypothetical ego undercontrolling child and then a hypothetical ego resilient child. The criterion definers showed high levels of agreement,

the reliabilities of the composited ego control and ego resilient criterion definitions being .91 and .90, respectively. Having established reliable criterion definitions of ego undercontrol and ego resiliency, the actual Q description of each child in the three year old group was then correlated with the criterion ego undercontrol description and separately with the criterion ego resiliency definition. The resulting correlations index the similarity between the personality description of the child as seen by his or her nursery school teachers and the criterion definitions. These two indices serve as scores and are referred to as the Teacher-based Q-sort Composite Scores. At age four and at age seven, the same procedures were followed to derive Teacher-based Q-sort Composite Scores on the ego control and the ego resiliency dimensions from the available Q descriptions.

The two very different methods used to objectify the concepts of ego control and ego resiliency at three time periods were evaluated with regard to their conceptual and psychometric properties. The convergent-discriminant validation matrix, uncorrected for attenuation, is presented in Table 1. This table contains a great deal of information. The convergent validities are represented in the upper-left-hand and the lower-right-hand quadrants for ego control and ego resiliency, respectively, for boys and for girls. Within these quadrants, the correlations enclosed within the squares indicate the cross-time correlations for each of the two alternative methods of assessment. It should be pointed out that these data have not benefited from the legitimate application of hindsight. It may come as some surprise to learn that our a priori expectations were not always subsequently justified by the data! Our experimentally based composites could be improved appreciably. By applying conventional psychometric procedures to the data available at age three, for

example, those measures that were unreliable or undiscriminating could be identified and dropped; other measures that were discriminating could be recognized and included in a revised composite. The recognitions derived from the intercorrelations among the data obtained at age three then could be used, quite legitimately, to improve the validity of the composites at later ages. Finally, we note that we have not yet generated the experimental composites from the data for age seven, the relevant cells in Table 1 having been left blank.

We suggest that these data are, overall, rather impressive. There is clear evidence of appreciable convergent-discriminant validity for both the ego control and ego resiliency concepts, both in the sample of girls and in the sample of boys, at several ages. The concepts of ego control and ego resiliency, as expected, prove to be relatively independent. Additional data on the behavioral manifestations of these constructs is reported in Table 2 and Table 3. These tables include the CCQ items found to correlate significantly at both age three and age four with the completely independent experimentally derived ego control and ego resiliency scores obtained at age four. Again, these correlations have not been corrected for attenuation.

The constellation of meaning surrounding the ego control and ego resiliency dimensions is again impressive, and it is durable. Thirty-four CCQ items were significantly correlated ($p < .05$) with the experimentally derived ego undercontrol index at both ages three and four. Children scoring high on the experiment-based ego control composite are independently described at both age three and four by their nursery school teachers, who have no knowledge of their experimental performance, as more active, assertive, aggressive, competitive, outgoing, attention-seeking, extrapunitive, overprivate than children

scoring low on the composited ego undercontrol scores derived from the test situations. These personality characteristics are strongly consistent with the conceptual meaning of ego undercontrol.

Thirty-three CCQ items were significantly correlated with the experimentally derived ego resiliency index at both age three and four. Children scoring high on the experiment-based composite indexing ego resiliency were described by their nursery school teachers as more empathic, able to cope with stress, bright, emotionally appropriate, self-accepting, novelty-seeking, fluent, self-reliant, competent, creative, and less anxious, conflicted, suspicious, sulky, imitative, and seeking of reassurance. These personality characteristics are strongly consistent with the conceptual meaning of ego resiliency.

In sum, we suggest that we have been able to demonstrate the presence in behavior, for both sexes, over time, and across methods of experimentation and observation, of two context-responsive personality subsystems that separately and in conjunction appear to have consequentiality.

J. Block & J. H. Block
February, 1977

Table 1

EGO CONTROL AND EGO RESILIENCY CONVERGENT-DISCRIMINANT VALIDATION MATRIX

			UNDERCONTROL							RESILIENCY						
			Teacher-Based Q-sort Composites			Composite of Experimental Scores				Teacher-Based Q-sort Composites			Composite of Experimental Scores			
		Age	3	4	7	3	4	5	7	3	4	7	3	4	5	7
UNDERCONTROL	Teacher-Based Q-sort Composites	3	---	82[a]	57[a]	47[a]	39[b]	12		-25	-04	05	-15	11	-28	
		4	70[a]	---	50[a]	36[c]	43[a]	18		-33[c]	-16	-02	-08	-07	-28[c]	
		7	47[b]	56[a]	---	45[b]	42[b]	33[c]		21	-02	16	14	-17	-26	
	Composite Experiment-Based Scores	3	52[a]	34[c]	31[c]	---	55[a]	25		01	-04	-04	-07	-26	-14	
		4	49[a]	40[a]	34[b]	43[b]	---	27[c]		-33[c]	-13	-04	-28	-27[c]	-19	
		5	02	-01	34[c]	08	22	---		00	-03	10	-07	-20	-03	
		7							---							
RESILIENCY	Teacher-Based Q-sort Composites	3	05	-13	02	-04	-18	01		---	65[a]	33[c]	45[a]	30[c]	44[b]	
		4	-14	-30[c]	-18	-36[b]	-42[a]	-15		69[a]	---	47[a]	52[a]	34[b]	29[c]	
		7	-02	-03	-03	00	-21	07		19	38[b]	---	21	26	24	
	Composite Experiment-Based Scores	3	-24	-18	-23	-15	08	-30		38[b]	33[c]	18	---	19	50[a]	
		4	-14	-27[c]	-02	-23	-20	-11		41[b]	52[a]	29[c]	41[b]	---	17	
		5	-06	-04	-12	-05	-24	-23		23	38[b]	49[a]	43[b]	18	---	
		7														

Note. All decimals are omitted. Above the diagonal are entered the correlations for Boys. Below the diagonal are entered the correlations for Girls. Correlations designated by an a are significant at or beyond the .001 level; by a b at the .01 level; by a c at the .05 level (all two-tailed tests). Ns range from 32 to 64 and are generally in the region of 50 to 60 for both sexes. All correlations are uncorrected for attenuation.

Table 2

CCQ Items Significantly Correlated at Both Age 3 and 4
with the Experimentally Derived Undercontrol Index at Age 4

CCQ Item	r_3	r_4
Considerate of other children	-.30 a	-.32 a
Helpful and cooperative	-.24 a	-.24 a
Keeps thoughts to self	-.40 a	-.18 b
Transfers blame to others	.29 a	.33 a
Characteristically stretches limits	.27 a	.36 a
Concerned with moral issues	-.19 b	-.32 a
Takes advantage of others	.33 a	.35 a
Tries to be the center of attention	.31 a	.23 a
Uses and responds to reason	-.24 a	-.42 a
Is physically active	.43 a	.30 a
Is vital, energetic, lively	.44 a	.27 a
Is restless and fidgety	.35 a	.34 a
Likes to compete	.31 a	.27 a
When in conflict, tends to give in	-.32 a	-.20 b
Has high standards of performance for self	-.21 b	-.21 b
Is physically cautious	-.32 a	-.27 b
Has rapid mood shifts	.26 a	.21 b
Is afraid of being deprived	.19 b	.32 a
Is jealous and envious	.19 b	.34 a
Tends to dramatize or exaggerate mishaps	.22 b	.22 b
Is neat and orderly	-.19 b	-.19 b
Is obedient and compliant	-.28 a	-.26 a
Has a rapid personal tempo	.43 a	.34 a
Is unable to delay gratification	.30 a	.43 a
Is attentive, able to concentrate	-.38 a	-.32 a
Is planful, thinks ahead	-.33 a	-.38 a
Is dependable	-.28 a	-.31 a
Teases other children	.27 a	.22 b
Is self-assertive	.33 a	.25 a
Is aggressive	.40 a	.32 a
Likes to be alone, enjoys solitary activities	-.36 a	-.28 a
Overreacts to minor frustrations	.30 a	.35 a
Is shy and reserved	-.41 a	-.30 a
Is reflective	-.45 a	-.42 a

The letter a signifies significance at the .01 level; the letter b, at the .05 level.
Items significantly correlated at only one age level are not included.
Sample size is 118 at age 3; 128 at age 4.

Table 3

CCQ Items Significantly Correlated at Both Age 3 and 4
with the Experimentally Derived Resiliency Index at Age Four

CCQ Item	r_3	r_4
Considerate of other children	.26 a	.25 a
Reverts to immature behavior under stress	-.40 a	-.27 a
Concerned with moral issues	.32 a	.23 a
Prefers non-verbal methods of communication	-.24 b	-.21 b
Helpful and cooperative	.20 b	.28 a
Characteristically tries to stretch limits	-.24 b	-.23 b
Open and straightforward	.22 b	.18 b
Uses and responds to reason	.44 a	.43 a
Shows recognition of others' feelings; empathic	.24 a	.25 a
Restless and fidgety	-.29 a	-.26 a
Curious and exploring; seeks new experiences	.26 a	.27 a
Tends to go to pieces under stress	-.28 a	-.22 b
Has high performance standards for self	.38 a	.40 a
Seeks reassurance about his/her worth	-.21 b	-.26 b
Shows specific behavioral mannerisms	-.31 a	-.19 b
Has bodily symptoms as a function of conflict or tension	-.23 b	-.19 b
Is afraid of being deprived	-.29 a	-.25 a
Unable to delay gratification	-.39 a	-.27 a
Attentive and able to concentrate	.49 a	.44 a
Planful, thinks ahead	.43 a	.31 a
Appears bright	.46 a	.34 a
Is verbally fluent	.43 a	.25 a
Is dependable	.27 a	.34 a
Appears to feel unworthy; thinks of self as "bad"	-.22 b	-.34 a
Tends to be suspicious, distrusting	-.19 b	-.21 b
Tends to imitate those admired	-.31 a	-.23 b
Is self-reliant	.29 a	.33 a
Is competent, skillful	.45 a	.37 a
Emotional reactions are inappropriate	-.21 b	-.39 a
Tends to be sulky, whiny	-.28 a	-.20 b
Is creative in perception, thoughts, work or play	.36 a	.25 a
Is reflective	.37 a	.28 a
Is easily victimized, scapegoated	-.20 b	-.18 b

The letter a signifies significance at the .01 level; the letter b, at the .05 level.
Items significantly correlated at only one age level not included.
Sample size is 118 at age 3; 128 at age 4.